resetting the memory element if the oscillation has stopped, wherein

the check of the other impedance values uses an oscillation model which is formed from previous impedance values associated with the oscillation, or from variables which are dependent on the impedance values,

a check is performed to determine whether other impedance values formed or a variable which is dependent on the other impedance values differ from the oscillation model, and

an occurrence of other impedance values or of a variable dependent on the impedance values which differs from the oscillation model is assessed as the oscillation having stopped.

2. (Amended) The method as claimed in claim 1, wherein the oscillation model is determined by means of a least squares estimation method.

3. (Amended) The method as claimed in claim 2, wherein a function in the form $f(x)=ax^3+bx^2+cx+d$ with the parameters a, b, c and d, for which one or more parameters can be defined to be zero from the start, or

a sum of decaying sinc and cosine functions is used as the model rule for the oscillation model.

4. (Amended) The method as claimed in claim 1, wherein resistance values are used as the variable dependent on the impedance values.

5. (Amended) The method as claimed in claim 1, wherein reactance values are used as the variable dependent on the impedance values.

6. (Amended) The method as claimed in claim 1, wherein time derivative values of the impedance are used as the variable dependent on the impedance values.

7. (Amended) The method as claimed in claim 1, wherein time derivative values of a resistance are used as the variable dependent on the impedance values.

8. (Amended) The method as claimed in claim 1, wherein time derivative values of a reactance are used as the variable dependent on the impedance values.

9. (Amended) The method as claimed in claim 1, wherein positive phase sequence system impedance values are formed from the phase current and phase voltage sample values, and a common memory element is provided, and a common oscillation signal is produced, for all the phases in the power supply system.

10. (Amended) The method as claimed in claim 1, wherein phase impedance values are formed from the phase current and phase voltage sample values of each phase of the power supply system to be investigated for oscillation, and a dedicated memory element is provided, and a dedicated oscillation signal is produced, for each of these phases.

11. (Amended) The method as claimed in claim 10, wherein a variable U_re including the real part of the phase voltage sample values, a variable U_im including the imaginary part of the phase voltage sample values, a variable I_re including the real part of the phase current sample values and a variable I_im including the imaginary part of the phase current sample values are formed from the phase current and phase voltage sample values ~~(i, u)~~ for each phase,

a phase real power variable P is determined from $P = U\_re \cdot I\_re - U\_im \cdot I\_im$,

a phase Wattless component variable Q is determined from $Q = U\_im \cdot I\_re + U\_im \cdot I\_re$,

a squared phase current amplitude variable I^2 is determined from $I^2 = I\_re \cdot I\_re + I\_im \cdot I\_im$,

system-frequency components are removed by means of a least squares estimation method from the phase real power variable P, from the phase wattless component variable Q and from the squared phase current amplitude variable I^2, and

phase resistance values R are determined from $R=P/I^2$ and phase reactance values X are determined from $X=Q/I^2$, and phase impedance values $Z=R+jX$ are thus determined.

In the Abstract:

Please replace the Abstract with the substitute Abstract attached hereto.